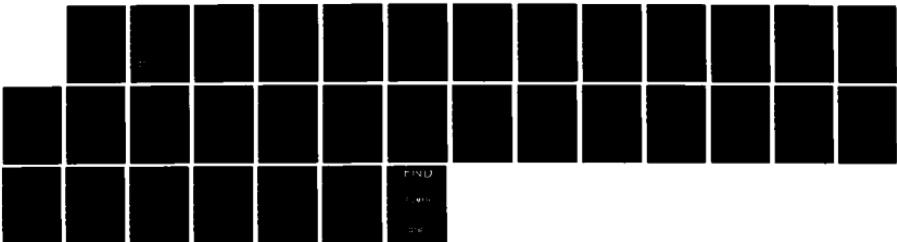
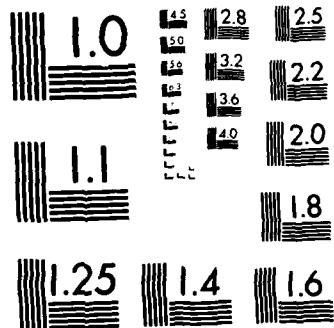


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ANALYSIS(U) ARMY AVIATION SYSTEMS COMMAND ST LOUIS MO  
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PARTS REQUIREMENTS AND COST MODEL (PARCOM)  
SENSITIVITY ANALYSIS

DAVID J. ALLTON  
Operations Research Analyst

February 1985

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**PARTS REQUIREMENTS AND COST MODEL**

**(PARCOM)**

**SENSITIVITY ANALYSIS**

**Dr. David J. Alton  
Operations Research Analyst**

**February 1985**

**US ARMY AVIATION SYSTEMS COMMAND  
DIRECTORATE FOR PLANS AND ANALYSIS  
OPERATIONAL SYSTEMS ANALYSIS DIVISION  
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St. Louis, Missouri 63120-1798**

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## **1.0 INTRODUCTION**

### **1.1 Overview/PARCOM Turnkey Project**

In 1984, the Plans and Analysis Directorate of the US Army Aviation Systems Command (AVSCOM) obtained the Concepts Analysis Agency's (CAA's) versions of the Overview model and the Parts Requirement and Cost Model (PARCOM).

The Overview and PARCOM models were revised and developed as a result of the Aircraft Spare Stockage Methodology (Aircraft Spares) Study conducted by CAA. The main purpose of this study was to provide the Army with an analytical tool to provide a quickly gross estimation of spare parts requirements and costs as they relate to flying hour and availability objectives during a wartime scenario.

The Overview/PARCOM Turnkey Project resulted in an "extended PARCOM" to replace Overview. Therefore, PARCOM was considered to be an appropriate model to provide that quick reaction, gross estimation of spare parts requirements and costs as they relate to flying hour and availability objectives during a wartime scenario.

### **1.2 PARCOM Description**

CAA developed PARCOM which generates cost-effective mixes of add-on aircraft spare parts need to achieve a specified flying program under:

- a. Various cost constraints**
- b. Part replacement policies**
- c. Aircraft availability objectives**

PARCOM inputs consists of two data bases (parts data base and the scenario data base). The parts data base consists of several Reliability and Maintainability Logistics (RAMLOG) variables such as: unit cost; repair times; order and ship time; inventory; and failure rate per million flying hours. The scenario data base provides scenario type information such as: aircraft losses per day; maximum flying hours per aircraft per day; and add-on cost limit.

Typically, PARCOM outputs include total cost of various part replacement policies, daily aircraft availability and flying hours per aircraft per day, average aircraft availability and flying hours per aircraft per day, and fraction daily flying program achieved.

Typical questions addressed by PARCOM are, for example, using a budget limit of \$15 million:

- a. What spares should be added?
- b. What is associated fraction of flying program achievable?

### 1.3 Purpose of the Sensitivity Analysis

PARCOM is a deterministic model which means that all the parameters of the model are known constants. This implies that the variables entering the model can and are measured with a high degree of accuracy. Since these parameters are estimated from historical data, some uncertainty in their values is inevitably present. For this reason, a sensitivity analysis needs to be conducted on PARCOM. The general purpose of the sensitivity analysis is to determine which input variables are relatively sensitive (i.e., those variables that cannot be changed much without changing the solution). This will allow the analyst to know which variables need to be closely scrutinized in the data collection phase of any study that will use PARCOM.

## **2.0 STUDY METHODOLOGY**

### **2.1 Choice of Variables**

In this analysis, four input variables were chosen to determine their sensitivity to the output variable "percent of flying hours accomplished" for "current stock = initial stock, only cost of added buy (= 15,000,000.) is available for reallocation." This output variable is generally the last table in the output from a PARCOM computer run. The four input variables used are as follows:

- a. Failure Rate
- b. Inventory
- c. Maximum Flying Hours/Aircraft/Day
- d. Cost Constraint

The first two variables are from the parts data base and the last two are from the scenario data base. The failure rates for the baseline case were obtained from the Sample Data Collection (SDC). Since the data results from a sample with an assumption that errors found in the data would be randomly distributed (positives offset negatives) it would be useful to see the effect of non random errors to the data. Further, in discussions with the AH-1 Project Manager's Office, questions were raised as to the accuracy of the SDC and whether or not the Average Monthly Demand (AMD) factor should be used in lieu of SDC. Therefore, failure rates were chosen as an input for sensitivity analysis.

The current inventory for each part was generally obtained from estimates produced by SESAME. In discussions with various individuals at AVSCOM, it was determined that the actual inventory at a specific unit was extremely difficult to determine. Further, the Prescribed Load List (PLL) and the Authorized Stockage List (ASL) is different for each unit. Therefore any

inventory would be an estimation of what actually is the current inventory and very well may have a bias in the data.

In the Maximizing Daily Helicopter Flying Hours Study conducted by CAA, the issue of maximum flying hour/aircraft/day was addressed. This variable was chosen to determine the effect of changes in the maximum flying hours/aircraft/day on the percent of flying hours accomplished.

Since PARCOM was developed to consider the effect of changing budgeted dollar constraints to a flying hour program, one would expect that for the model to be useful the variable "cost constraint" should be sensitive.

## 2.2 Baseline Case Description

The baseline case represents that case in which the sensitivity analysis was based upon. The values for the inputs can be found in Appendices A and B. The resultant output value for the percent of flying hours accomplished was 53.2 percent. This represents the achievable program flying hours per available aircraft per day.

The baseline case represents those values for data collected for the AH-1S in the Overview/Turnkey Project with the exception that a cost constraint of \$15 million was used in lieu of \$10 million. Thus, the results of this sensitivity analysis provides a guide to the changes in the results for the AH-1S provided by this Command in the Overview/PARCOM Turnkey Project that may be experienced.

## 2.3 Procedure

The basic procedure used in this study was to change the value of the specified variable for all the parts by a specific amount. For example, the failure rates for all parts were increased by 10, 25, 50, and 75 percent and were also decreased by 10, 20 and 30 percent. This was done while holding all other variables at their baseline values. At no time was more than one variable changed from its baseline value. Further, for the variables failure rates and inventory, all parts were changed by the same increment.

Thus, the results for a change of the percent in the failure rates indicates the effect of changing all the failure rates by ten percent and then running PARCOM.

### 3.0 FINDINGS

#### 3.1 Failure Rate

Figure 1 demonstrates that the output product called "Percent Flying Hours Accomplished" is highly sensitive to changes in the input variable "Failure Rate". If the "Failure Rate" is increased by 10%, then the "Percent Flying Hours Accomplished" is decreased from 53.2% to 44.9%, or a decrease of 15% from the baseline value. A decrease in failure rate of 10% results in a 25% increase in the output variable (from 53.2% to 67.2%).

This finding emphasizes the need for the analyst to scrutinize the data obtained that represents failure rate, very closely. This is because if the data does contain a bias one would expect a drastically different solution under unbias conditions (i.e., if the SDC underestimates the failure rates the resulting flying hour program accomplishment is likely to be drastically over optimistic).

#### 3.2 Inventory

Figure 2 shows the graphical results for changes in the input variable inventory. The model is sensitive to this parameter in an almost direct proportional representation. Thus, a 10 percent change in the baseline data variable produces an almost 10 percent change (of the baseline) in percent flying hours accomplished.

This finding shows the need for the analyst to fully state what inventory was used in the data base and how any estimates were made (i.e., were war reserves used as part of the initial inventory).

#### 3.3 Maximum Flying Hours/Aircraft/Day

The findings for the variable "Maximum Flying Hours" are shown on Figure 3. The findings indicate that the model is sensitive to the variable

Figure 1  
"FAILURE RATE"

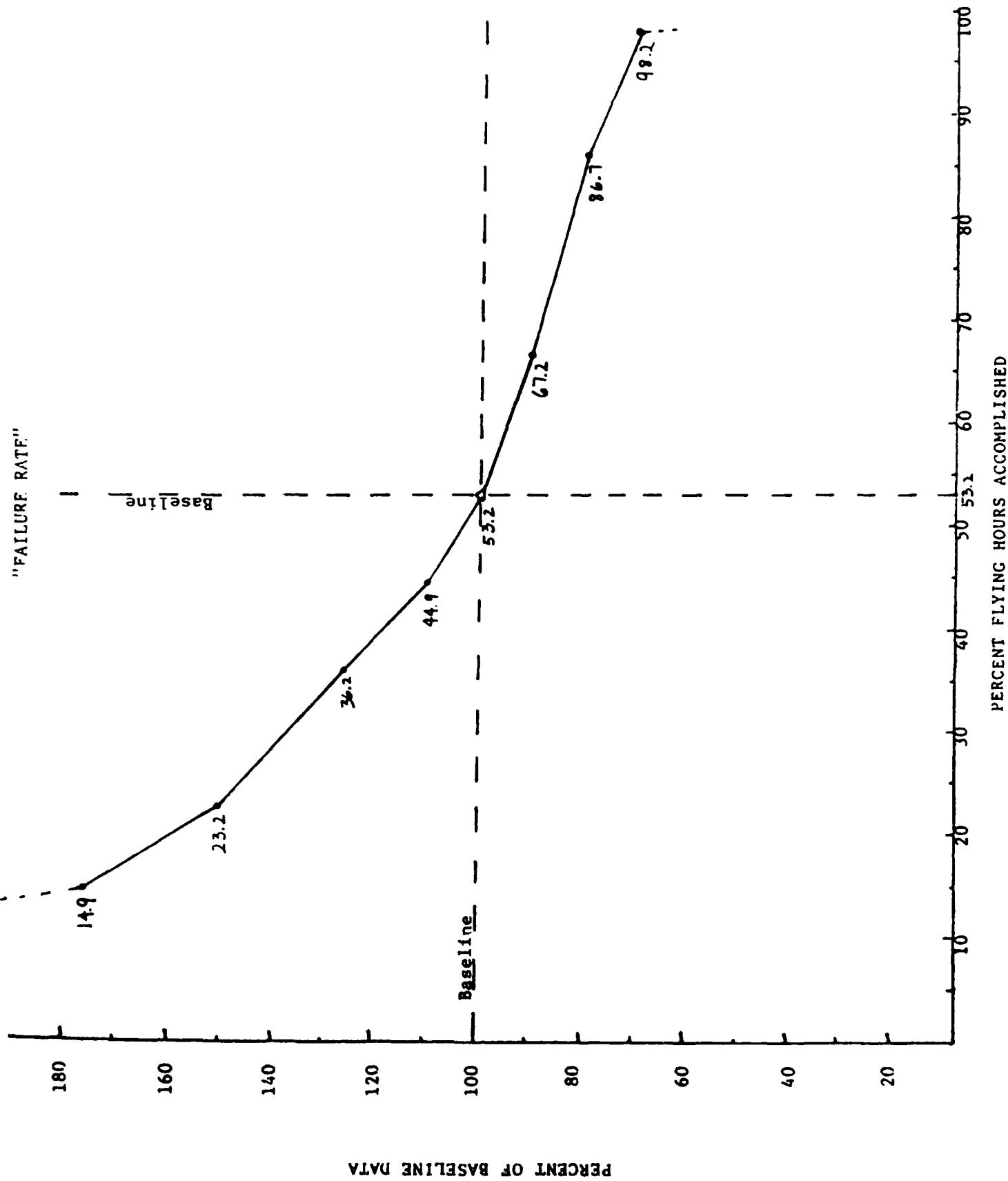


Figure 2  
INVENTORY

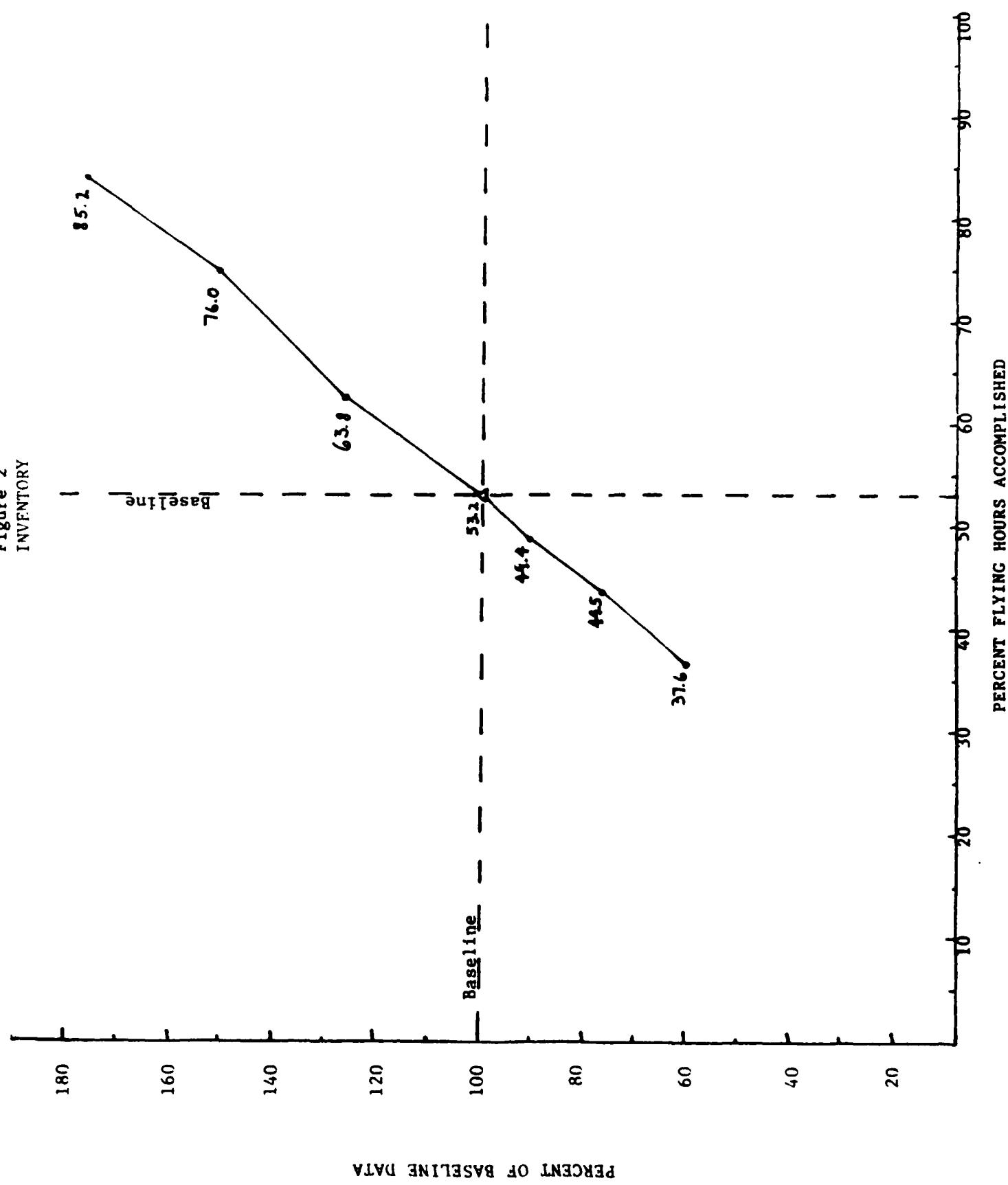
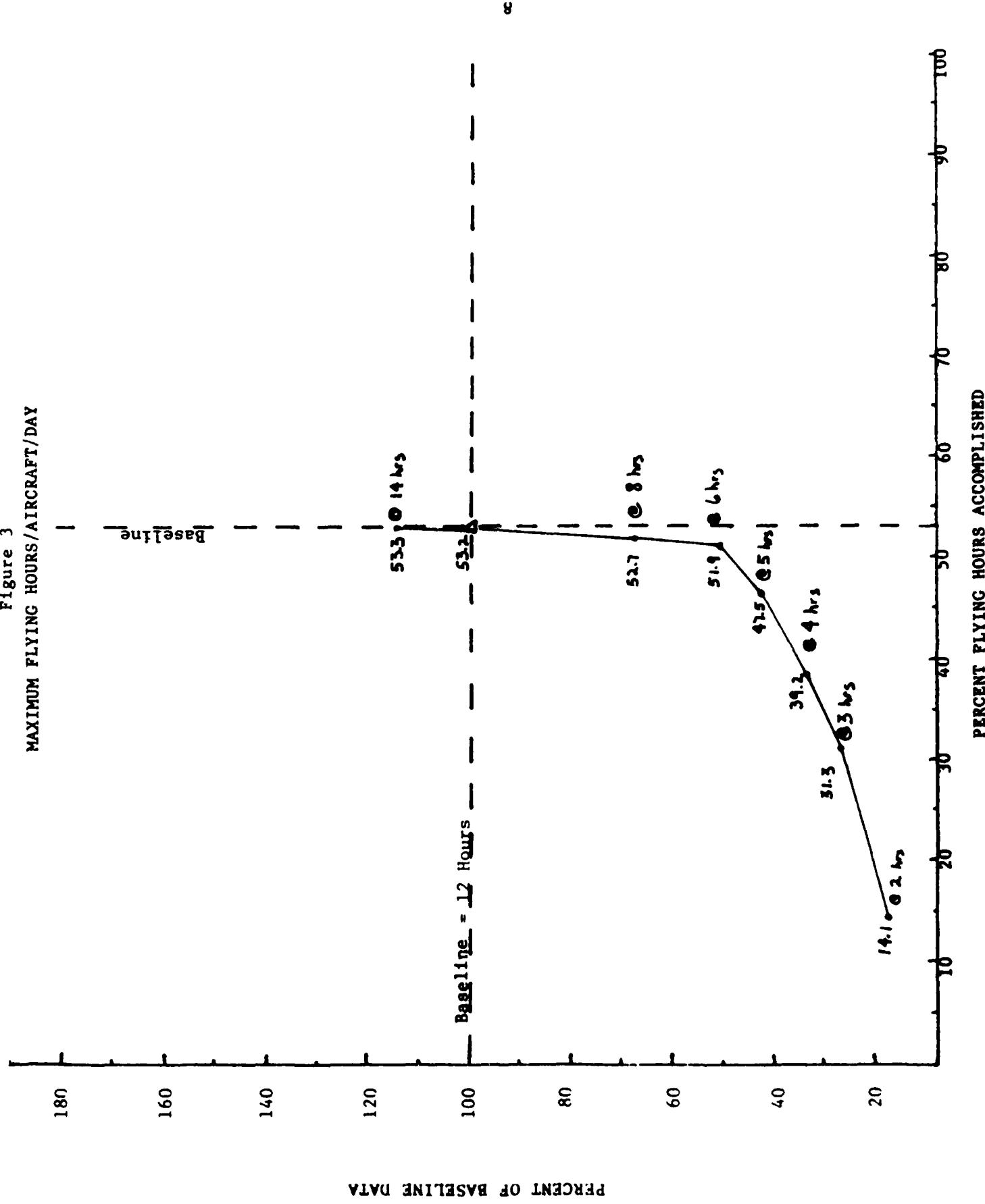


Figure 3  
MAXIMUM FLYING HOURS/AIRCRAFT/DAY



in the low end of the spectrum. Once the maximum flying hours per day is set at 6 hours or more, there is virtually no change in the output. However, if one can only reasonably expect 2 to 6 hours of maximum fly hours per aircraft per day then the model is sensitive to the input and one can expect to find a much different solution, for example, for 4 hours as opposed to 5 hours.

#### 3.4 Cost Constraint

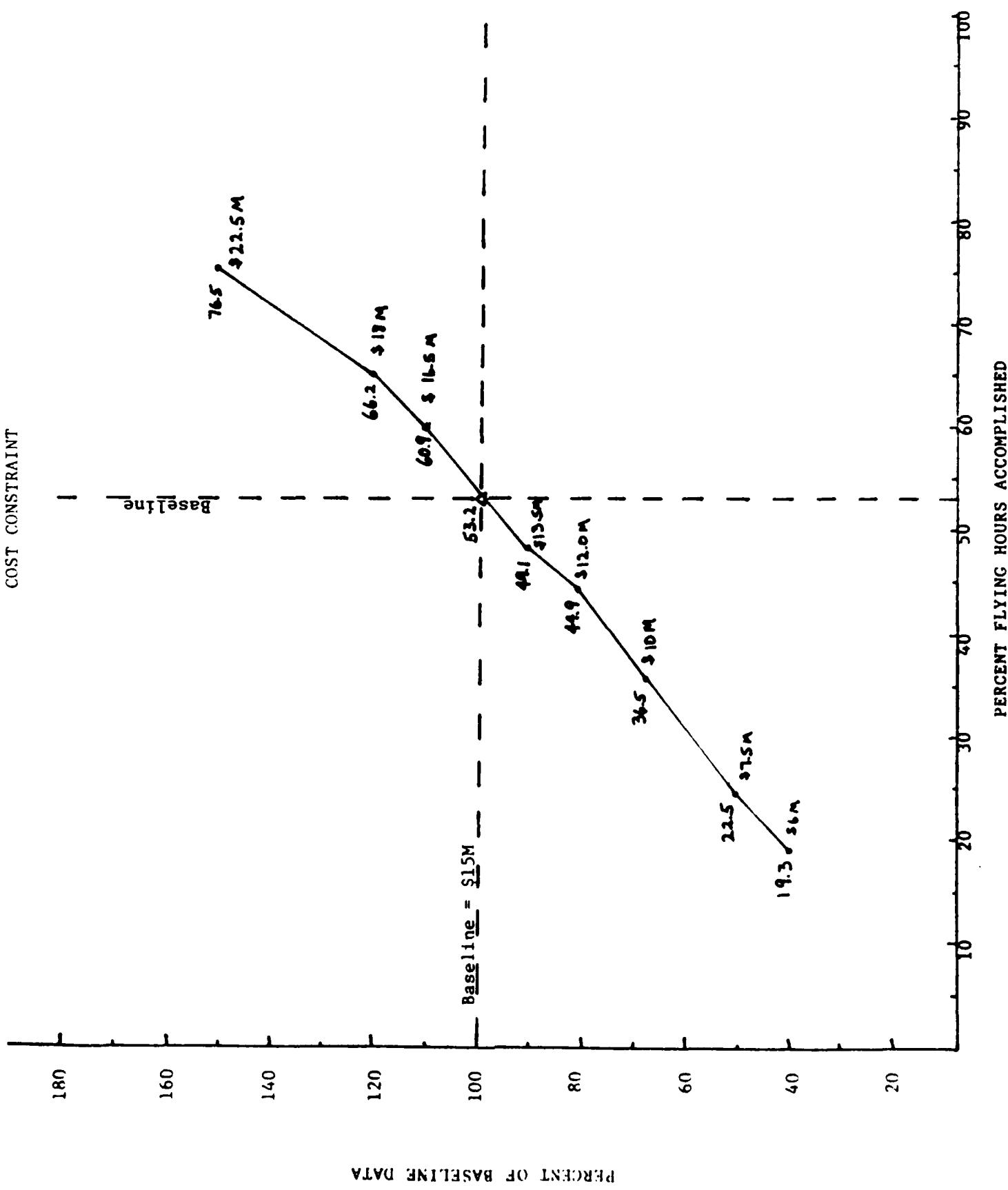
Since one of the purposes of PARCOM is to provide what are answers to various budget constraints, one would expect any model to show a sensitivity to this variable if cost is assumed to be a major driver of any flying hour program. Figure 4 demonstrates that changes in the add-on cost constraint will have an effect on the percent flying hours accomplished. Therefore, any decrease in the budget that would decrease the add-on cost constraint would significantly reduce the force capability of the fleet.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

This analysis demonstrates the need for concern during the data collection phase of any study using PARCOM and the assurance that the various scenarios do reflect realistic assumptions and possibilities. Further, the need for annual updates (at least) is emphasized so that the data used is the most timely and hopefully most accurate. However, if a time trend is evident (i.e., the failure rates are getting higher every year) then special concern must be expressed as to even the gross accuracy of the results.

In order to help offset the problems highlighted in this study, it is recommended that any future PARCOM study (run) should contain a minor sensitivity analysis that shows what the effect would be if the failure rates were changed by plus or minus 10 percent and if inventory were changed by the same. This would produce a couple of ranges of the output variable "Percent Flying Hours Accomplished". It should be noted that PARCOM produces only rough estimates and these ranges should not be construed as anything other than ranges around rough estimates.

Figure 4  
COST CONSTRAINT



**APPENDIX A**

**Baseline Case Parts Data Base**

## BASELINE CASE PARTS DATA BASE APPENDIX A

BASELINE CASE PARTS DATA BASE

ITEMS RANK	OFFERED IN NORMAL INPUT ORDER	PART	MSN:	DESCRIPTION	COST	0SI	FAIL	RT	NRTS	BCY	TCY	TRT	BCON	DCON	GPA	ESS	INVEN
1	1	1	1	FEEDER ASSY GUN	7601.	0.0.	0.000334	1.00	0.0.	0.000003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1	1	1	GUN BARRELS	324.	0.0.	0.000003	0.00	0.0.	0.000003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1	1	1	N260 ROCKET LAUN	600.	0.0.	0.000406	0.00	0.0.	0.000125	1.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1	1	1	GUN DRIVE MOTOR	4933.	0.0.	0.000125	1.00	0.0.	0.000136	1.00	0.00	0.00	0.00	0.00	0.00	0.00
5	1	1	1	TURRET CNTL ASSY	24417.	0.0.	0.000125	1.00	0.0.	0.000151	1.00	0.00	0.00	0.00	0.00	0.00	0.00
6	1	1	1	GUN CNTL ASSEM	7501.	0.0.	0.000009	1.00	0.0.	0.000016	1.00	0.00	0.00	0.00	0.00	0.00	0.00
7	1	1	1	LOGIC RELAY ASSY	5247.	0.0.	0.000016	1.00	0.0.	0.000015	1.00	0.00	0.00	0.00	0.00	0.00	0.00
8	1	1	1	GUN LOGIC CNTL U	7885.	0.0.	0.000015	1.00	0.0.	0.000013	1.00	0.00	0.00	0.00	0.00	0.00	0.00
9	1	1	1	ELECT PROCES UNI	29458.	0.0.	0.000013	1.00	0.0.	0.000013	1.00	0.00	0.00	0.00	0.00	0.00	0.00
10	1	1	1	AIRSP&DIRECT SEN	14916.	0.0.	0.000045	1.00	0.0.	0.0000181	1.00	0.00	0.00	0.00	0.00	0.00	0.00
11	1	1	1	INFRA CNTL UNIT	7524.	0.0.	0.0000181	1.00	0.0.	0.000013	1.00	0.00	0.00	0.00	0.00	0.00	0.00
12	1	1	1	LOW AIRSP INDICA	2491.	0.0.	0.000013	1.00	0.0.	0.000045	1.00	0.00	0.00	0.00	0.00	0.00	0.00
13	1	1	1	OPERATIONS UNIT	6490.	0.0.	0.000045	1.00	0.0.	0.000051	1.00	0.00	0.00	0.00	0.00	0.00	0.00
14	1	1	1	DISPLAY UNIT	11217.	0.0.	0.000045	1.00	0.0.	0.000051	1.00	0.00	0.00	0.00	0.00	0.00	0.00
15	1	1	1	EMERGENCY STOW CN	4437.	0.0.	0.000045	1.00	0.0.	0.000039	1.00	0.00	0.00	0.00	0.00	0.00	0.00
16	1	1	1	BUFFER AMP	864.	0.0.	0.000039	1.00	0.0.	0.000051	1.00	0.00	0.00	0.00	0.00	0.00	0.00
17	1	1	1	GUN TURRET	150000.	0.0.	0.000026	1.00	0.0.	0.000026	1.00	0.00	0.00	0.00	0.00	0.00	0.00
18	1	1	1	GUNNER LINNAGE A	2525.	0.0.	0.000026	1.00	0.0.	0.000026	1.00	0.00	0.00	0.00	0.00	0.00	0.00
19	1	1	1	PILOT LINNAGE AS	2466.	0.0.	0.000045	1.00	0.0.	0.000057	1.00	0.00	0.00	0.00	0.00	0.00	0.00
20	1	1	1	HELMET SIGHT AS	1656.	0.0.	0.000057	1.00	0.0.	0.000052	1.00	0.00	0.00	0.00	0.00	0.00	0.00
21	1	1	1	CABLE ASY	854.	0.0.	0.000052	1.00	0.0.	0.000052	1.00	0.00	0.00	0.00	0.00	0.00	0.00
22	1	1	1	ELEC INTERF ASY	10459.	0.0.	0.000136	1.00	0.0.	0.000136	1.00	0.00	0.00	0.00	0.00	0.00	0.00
23	1	1	1	SIGNAL PROCESSOR	41266.	0.0.	0.000497	1.00	0.0.	0.000497	1.00	0.00	0.00	0.00	0.00	0.00	0.00
24	1	1	1	FIRE CNTL COMPUT	51764.	0.0.	0.000045	1.00	0.0.	0.000049	1.00	0.00	0.00	0.00	0.00	0.00	0.00
25	1	1	1	BORE SIGHT MEMORY	6133.	0.0.	0.000049	1.00	0.0.	0.000049	1.00	0.00	0.00	0.00	0.00	0.00	0.00
26	1	1	1	HEADS-UP DISPLAY	45659.	0.0.	0.000049	1.00	0.0.	0.000049	1.00	0.00	0.00	0.00	0.00	0.00	0.00
27	1	1	1	TSU	176483.	0.0.	0.000032	1.00	0.0.	0.000032	1.00	0.00	0.00	0.00	0.00	0.00	0.00
28	1	1	1	MS. CNT. AMPLIFIE	124253.	0.0.	0.000016	1.00	0.0.	0.000017	1.00	0.00	0.00	0.00	0.00	0.00	0.00
29	1	1	1	POWER SUPPLY	45551.	0.0.	0.000017	1.00	0.0.	0.000026	1.00	0.00	0.00	0.00	0.00	0.00	0.00
30	1	1	1	STAB CNTL AMP	88592.	0.0.	0.000026	1.00	0.0.	0.000027	1.00	0.00	0.00	0.00	0.00	0.00	0.00
31	1	1	1	TOW LAUNCHER	12485.	0.0.	0.000045	1.00	0.0.	0.000045	1.00	0.00	0.00	0.00	0.00	0.00	0.00
32	1	1	1	RIGHT HAND CNTL	2773.	0.0.	0.000045	1.00	0.0.	0.000045	1.00	0.00	0.00	0.00	0.00	0.00	0.00
33	1	1	1	TOW CNTL PANEL	25298.	0.0.	0.000049	1.00	0.0.	0.000044	1.00	0.00	0.00	0.00	0.00	0.00	0.00
34	1	1	1	PIPE, CYCLIC CONT	124.	0.0.	0.000027	1.00	0.0.	0.000027	1.00	0.00	0.00	0.00	0.00	0.00	0.00
35	1	1	1	TRACK ASSEMBLY	146.	0.0.	0.000038	1.00	0.0.	0.000038	1.00	0.00	0.00	0.00	0.00	0.00	0.00
36	1	1	1	FAIRING ASSY, PYL	5799.	0.0.	0.000045	0.62	0.0.	0.000045	0.62	0.00	0.00	0.00	0.00	0.00	0.00
37	1	1	1	PAIR SWAY BRACE,F	23.	0.0.	0.000066	0.88	0.0.	0.000075	0.88	0.00	0.00	0.00	0.00	0.00	0.00
38	1	1	1	BOOT ASSEMBLY, FWD	16.	0.0.	0.000045	0.88	0.0.	0.000045	0.88	0.00	0.00	0.00	0.00	0.00	0.00
39	1	1	1	FUEL TANK AFT	3681.	0.0.	0.000039	0.49	0.0.	0.000039	0.49	0.00	0.00	0.00	0.00	0.00	0.00
40	1	1	1	CONNECTING LINK,	146.	0.0.	0.000038	0.49	0.0.	0.000038	0.49	0.00	0.00	0.00	0.00	0.00	0.00
41	1	1	1	BELL CRANK	176.	0.0.	0.000045	0.62	0.0.	0.000045	0.62	0.00	0.00	0.00	0.00	0.00	0.00
42	1	1	1	MOTOR ASSY, OIL CO.	174.	0.0.	0.000066	0.88	0.0.	0.000075	0.88	0.00	0.00	0.00	0.00	0.00	0.00
43	1	1	1	RETAINING, C	16.	0.0.	0.000045	0.88	0.0.	0.000045	0.88	0.00	0.00	0.00	0.00	0.00	0.00
44	1	1	1	HOLDING, DUST AND PW	69.	0.0.	0.000036	0.62	0.0.	0.000036	0.62	0.00	0.00	0.00	0.00	0.00	0.00
45	1	1	1	BEARING, CRANK	147.	0.0.	0.000045	0.62	0.0.	0.000045	0.62	0.00	0.00	0.00	0.00	0.00	0.00
46	1	1	1	SWING ASSEMBLY, FWD	128.	0.0.	0.000045	0.88	0.0.	0.000045	0.88	0.00	0.00	0.00	0.00	0.00	0.00
47	1	1	1	ASSEMBLY, FWD	114.	0.0.	0.000045	0.88	0.0.	0.000045	0.88	0.00	0.00	0.00	0.00	0.00	0.00
48	1	1	1	SHADIENT, FWD	470.	0.0.	0.000036	0.62	0.0.	0.000036	0.62	0.00	0.00	0.00	0.00	0.00	0.00
49	1	1	1	SWING ASSEMBLY, FWD	539.	0.0.	0.000036	0.62	0.0.	0.000036	0.62	0.00	0.00	0.00	0.00	0.00	0.00

## ITEMS RANK ORDERED IN NORMAL INPUT ORDER

PART	MSN	DESCRIPTION	COST	OST	FAIL RT	NRTS	BCY	DCY	DRT	ECBN	DCBN	GPA	ESS	INVEN
51	15600009188099	LEVER, ELEVATOR, A	119.	0.0.0000008	0.00	99.								
52	15600009757681	HORN ASSY ELEVAT	267.	0.0.000136	0.00	39.	70.	1.	1.	1.	1.	1.	1.	68
53	15600009716235	WALKING BEAM ASNS	58.	0.0.000030	0.00	39.	70.	1.	1.	1.	1.	1.	1.	20
54	15600009716236	BELL CRANK	110.	0.0.000271	0.00	69.	70.	1.	1.	1.	1.	1.	1.	6
55	15600009716324	BELL CRANK	106.	0.0.000039	0.00	123.	100.	1.	1.	1.	1.	1.	1.	5
56	15600009731754	TANK, LUBRICATING	163.	0.0.000022	0.00	0.	75.	1.	1.	1.	1.	1.	1.	29
57	15600009902911	JACK SHAFT ASSEMB	403.	0.0.000045	0.00	99.	70.	1.	1.	1.	1.	1.	1.	2
58	15600010125788	LINK ASSEMBLY, LT	423.	0.0.000038	0.07	156.	100.	1.	1.	1.	1.	1.	1.	2
59	15600010185919	FUEL TANK FWD	4154.	0.0.000010	0.59	39.	75.	1.	1.	1.	1.	1.	1.	88
60	15600010258545	GUNNER DOOR PLEX	600.	0.0.000020	0.00	0.	70.	1.	1.	1.	1.	1.	1.	26
61	15600010258546	PILOT DOOR FLEXI	668.	0.0.000045	0.00	0.	72.	1.	1.	1.	1.	1.	1.	68
62	15600010268919	BELL CRANK	125.	0.0.000015	1.00	48.	70.	1.	1.	1.	1.	1.	1.	2
63	15600010289472	TOP CANOPY PLEXI	877.	0.0.000016	0.00	0.	70.	1.	1.	1.	1.	1.	1.	2
64	15600010289474	PILOT WINDOW PLE	650.	0.0.000045	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
65	15600010289475	MINDSHLD LOW PLE	892.	0.0.000097	0.00	0.	70.	1.	1.	1.	1.	1.	1.	68
66	15600010289476	MINDSHLD UPP PLE	1037.	0.0.000021	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
67	15600010281098	BEAM ASSEMBLY, AN	112.	0.0.000015	0.00	24.	70.	1.	1.	1.	1.	1.	1.	28
68	15600010365318	RECEIVER, REFUEL	940.	0.0.000072	0.00	153.	100.	1.	1.	1.	1.	1.	1.	28
69	15600010716203	GUNN WINDOW PLEX	1636.	0.0.000045	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
70	15600010927085	OLEVIS	10.	0.0.000042	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
71	15600010991938	GUN ARMOR UPP LH	1052.	0.0.000022	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
72	15600010991939	PILOT ARMOR U-FRH	2106.	0.0.000026	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
73	15600010991963	GUN ARMOR UPP RH	1951.	0.0.000078	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
74	15600010992416	SUN SEAT BOT ARM	2930.	0.0.000039	0.00	0.	70.	1.	1.	1.	1.	1.	1.	28
75	15600010998429	PILOT LWR ARMOR	1129.	0.0.000015	0.00	15.	70.	1.	1.	1.	1.	1.	1.	28
76	15600011181776	RACK, EXTERNAL ST	4137.	0.0.000045	0.67	297.	100.	1.	1.	1.	1.	1.	1.	28
77	1560001107199	RETAINER, MAIN RO	43.	0.0.000026	1.00	128.	70.	1.	1.	1.	1.	1.	1.	28
78	1560001136314	TRUNNION, MAIN RO	429.	0.0.000045	1.00	261.	100.	1.	1.	1.	1.	1.	1.	28
79	15600011500910138	COLLET SET, ROTOR	233.	0.0.001000	1.00	216.	70.	1.	1.	1.	1.	1.	1.	28
80	15600011683859	DAPPER ASSEMBLY,	1445.	0.0.001537	1.00	162.	100.	1.	1.	1.	1.	1.	1.	28
81	15600011683861	LINK ASSY, SMASH	188.	0.0.000221	1.00	336.	100.	1.	1.	1.	1.	1.	1.	129
82	15600011683862	SCISSORS AND SLE	1823.	0.0.000045	1.00	83.	100.	1.	1.	1.	1.	1.	1.	129
83	156001245119	TRUNNIN. SET ASS	352.	0.0.000050	1.00	99.	70.	1.	1.	1.	1.	1.	1.	129
84	156001245224	Yoke Assembly, TA	2389.	0.0.000054	1.00	141.	100.	1.	1.	1.	1.	1.	1.	129
85	156001799165	Mast Assy, TRANSM	6646.	0.0.000058	0.00	156.	111.	1.	1.	1.	1.	1.	1.	69
86	156001799170	BLADE, ROTARY FLN	2539.	0.0.000117	0.00	99.	70.	1.	1.	1.	1.	1.	1.	69
87	156001799171	RETAINER, TAIL, TA	35.	0.0.000045	0.00	147.	70.	1.	1.	1.	1.	1.	1.	89
88	156001799172	MUR ASSEMBLY, TA	2425.	0.0.000025	0.00	0.	70.	1.	1.	1.	1.	1.	1.	129
89	156001799173	CR-SHEEAD ASSEMB	980.	0.0.000016	1.00	159.	100.	1.	1.	1.	1.	1.	1.	89
90	156001799174	BLADE, ROTARY WIN	7713.	0.0.001129	0.00	42.	110.	1.	1.	1.	1.	1.	1.	69
91	156004105925	CHAFING STRIP, YN	9.	0.0.002395	0.00	0.	70.	1.	1.	1.	1.	1.	1.	4
92	156004386344	DETECTOR, CHIP, TR	67.	0.0.000225	0.00	0.	70.	1.	1.	1.	1.	1.	1.	17
93	156004422513	SCISSORS ASSY, SW	791.	0.0.000066	0.00	98.	100.	1.	1.	1.	1.	1.	1.	2
94	15600476304	CH-D DETECTOR, TR	42.	0.0.000051	0.00	141.	100.	1.	1.	1.	1.	1.	1.	89
95	156004821068	EXTENSION, PYLON	438.	0.0.000099	0.00	159.	70.	1.	1.	1.	1.	1.	1.	2
96	1560052038	COME SET, TRUNNIO	12.	0.0.000045	1.00	183.	70.	1.	1.	1.	1.	1.	1.	29
97	156006907298	CAF ASSEMBLY, TAI	9.	0.0.000045	1.00	264.	100.	1.	1.	1.	1.	1.	1.	89
98	156007814142	DRIVING DRIVESH	208.	0.0.000025	0.97	87.	100.	1.	1.	1.	1.	1.	1.	129
99	156007919935	CAF ASSEMBLY	5.	0.0.000045	0.00	81.	70.	1.	1.	1.	1.	1.	1.	89
100	156007912533	COUPLING SET	253.	0.0.000008	0.00	159.	70.	1.	1.	1.	1.	1.	1.	26

## ITEMS RANK ORDERED IN NORMAL INPUT ORDER

PART	MSN	DESCRIPTION	COST	UST	FAIL	RT	NRTS	BCY	LCY	DRT	BCON	DCON	OPA	ESS	INVEN
101	150007711432	LINK ASSEMBLY, SW	308.	0. 0.	0.000366	0.00	100.	336.	1.	1	1	1	4	4	
102	150008130391	PITCH HORN ASSEM	461.	0. 0.	0.000255	0.00	45.	111.	1.	1	1	1	20	20	
103	150008396886	QUILL ASSEMBLY, G	1413.	0. 0.	0.00045	0.38	165.	111.	1.	1	1	1	4	4	
104	1510008519167	TR DR SHF CV AFT	187.	0. 0.	0.00006	0.00	15.	79.	1.	1	1	1	20	20	
105	150008519168	COVER ASSEMBLY, F	260.	0. 0.	0.00009	1.00	489.	70.	1.	1	1	1	4	4	
106	1510008526712	SHAFT, DROOP COMP	37.	0. 0.	0.000045	1.00	102.	70.	1.	1	1	1	20	20	
107	15150008665998	RING, INDEXING, ST	34.	0. 0.	0.00181	1.00	249.	79.	1.	1	1	1	1	1	
108	151500088718679	SUPPORT, SWASHPLA	266.	0. 0.	0.000945	1.00	180.	70.	1.	1	1	1	1	1	
109	1515000906424	YOKE ASSEMBLY, MA	9309.	0. 0.	0.000022	0.64	225.	85.	1.	1	1	1	11	11	
110	1500091886459	SLEEVE, COLLECTIV	621.	0. 0.	0.000001	1.00	138.	70.	1.	1	1	1	20	20	
111	1500091886459	Grip Assembly, MA	10424.	0. 0.	0.000022	0.53	45.	119.	1.	1	1	1	20	20	
112	150009146124	LINK ASSEMBLY, CO	1110.	0. 0.	0.00009	1.00	237.	100.	1.	1	1	1	60	60	
113	150009146160	SWASHPLATE AND S	3568.	0. 0.	0.000226	0.05	96.	156.	1.	1	1	1	20	20	
114	150009188144	PLATE, RETAINER, S	522.	0. 0.	0.000045	0.00	156.	70.	1.	1	1	1	20	20	
115	150009189326	BOOT, FRICTION, MA	20.	0. 0.	0.000361	0.00	129.	70.	1.	1	1	1	20	20	
116	150009189938	BELL CRANK,	101.	0. 0.	0.000678	0.00	234.	70.	1.	1	1	1	20	20	
117	15000935294	CLAMP, ROTOR	77.	0. 0.	0.000099	0.00	99.	70.	1.	1	1	1	21	21	
118	15150009362371	BOLT ASSEMBLY, RO	258.	0. 0.	0.000022	0.00	123.	70.	1.	1	1	1	20	20	
119	15150100082798	SHAFT ASSEMBLY, T	619.	0. 0.	0.000768	0.59	78.	92.	1.	1	1	1	80	80	
120	15150100087743	QUILL ASSEMBLY, T	3727.	0. 0.	0.000033	0.00	132.	100.	1.	1	1	1	80	80	
121	15150100087748	GEARBOX ASSEMBLY	11450.	0. 0.	0.000033	0.00	199.	100.	1.	1	1	1	80	80	
122	15150100087769	FILTER, FLUID, PRE	129.	0. 0.	0.000099	1.00	199.	100.	1.	1	1	1	80	80	
123	151501010146005	DRIVE ASSEMBLY, I	3481.	0. 0.	0.000542	0.00	120.	100.	1.	1	1	1	160	160	
124	151501010146007	HUB ASSEMBLY, MAI	57312.	0. 0.	0.001536	0.03	126.	100.	1.	1	1	1	160	160	
125	151501010146008	HANGER ASSEMBLY	1267.	0. 0.	0.001762	1.00	96.	100.	1.	1	1	1	160	160	
126	151501010150584	AIRBOX ASSEMBLY	9357.	0. 0.	0.000362	0.22	156.	100.	1.	1	1	1	20	20	
127	151500010600333	CROSS TUBE ASSY,	537.	0. 0.	0.001446	1.00	294.	100.	1.	1	1	1	20	20	
128	151500010600334	CROSS TUBE ASSY,	1287.	0. 0.	0.001220	0.00	39.	70.	1.	1	1	1	20	20	
129	151500010600335	FAIRING ASSY, LAN	39.	0. 0.	0.000814	0.00	78.	70.	1.	1	1	1	20	20	
130	151500010600336	FAIRING ASSY, LAN	39.	0. 0.	0.000407	0.00	111.	100.	1.	1	1	1	20	20	
131	1500001585559	SUPPORT, LANDING	58.	0. 0.	0.000407	0.00	189.	70.	1.	1	1	1	20	20	
132	1500001585605	SUPPORT, LANDING	52.	0. 0.	0.000542	0.00	189.	70.	1.	1	1	1	20	20	
133	1500007255721	FAIRING ASSY, LAN	36.	0. 0.	0.000542	0.00	357.	100.	1.	1	1	1	80	80	
134	1500007255724	SKID TUBE ASSEMB	51.	0. 0.	0.000678	0.00	120.	100.	1.	1	1	1	80	80	
135	1500007255724	SKID TUBE ASSEMB	982.	0. 0.	0.001329	0.00	39.	70.	1.	1	1	1	80	80	
136	1500007255724	SKID SHOE, LANDIN	686.	0. 0.	0.001119	0.00	165.	100.	1.	1	1	1	80	80	
137	1500007255724	SKID SHOE, LANDIN	68.	0. 0.	0.003977	0.00	195.	70.	1.	1	1	1	80	80	
138	1500007255724	SERVO CYLINDER	3397.	0. 0.	0.000226	0.00	39.	70.	1.	1	1	1	20	20	
139	1500007255724	SERVO CYLINDER	980.	0. 0.	0.000361	0.00	72.	100.	1.	1	1	1	20	20	
140	1500007255724	HOUSING ASSY, SER	1160.	0. 0.	0.000039	0.00	6.	70.	1.	1	1	1	20	20	
141	1500005637144	ACTUATOR, SERVO, F	1658.	0. 0.	0.000099	0.00	141.	110.	1.	1	1	1	20	20	
142	1500008198055	VALVE, HYDRAULIC,	408.	0. 0.	0.000136	0.49	309.	100.	1.	1	1	1	20	20	
143	1500008504706	FILTER, FLUID	35.	0. 0.	0.000039	0.00	84.	70.	1.	1	1	1	20	20	
144	1500008877186	ACCUMULATOR, HYD	323.	0. 0.	0.000099	0.00	90.	100.	1.	1	1	1	20	20	
145	1500008877186	FITTING AND FILT	38.	0. 0.	0.000136	0.00	48.	70.	1.	1	1	1	20	20	
146	1500008877186	BOTT, DUST AND MO	19.	0. 0.	0.000271	0.00	138.	70.	1.	1	1	1	20	20	
147	1500008877186	SERV CYLINDER	7667.	0. 0.	0.000588	0.00	90.	100.	1.	1	1	1	20	20	
148	1500008877186	TUBE ASSEMBLY, AC	968.	0. 0.	0.000044	0.00	111.	70.	1.	1	1	1	20	20	
149	1500008877186	RODY LINK ACTUAT	599.	0. 0.	0.000126	0.00	345.	70.	1.	1	1	1	20	20	
150	1500008877186	TIRE ASSY, ACTUAT	541.	0. 0.	0.000098	0.00	282.	70.	1.	1	1	1	20	20	

## ITEMS RANK ORDERED IN NORMAL INPUT ORDER

PART	MSN	DESCRIPTION	COST	UST	FAIL	RT	NATS	BCY	FCY	DRY	ECON	DCON	GPA	ESS	INVEN
151	165401145960296	HUMIDIFIER UNIT, M	4810.	0.0.	0.0000445	0.00	174.	100.	30.	0.00	0.00	20.	80.		
152	15500004454666	FILTER ASSY, HEAT	46.	0.0.	0.0000181	0.00	66.	100.	30.	2.00	0.00	20.	80.		
153	15500008189343	CONTROL STICK, CY	386.	0.0.	0.0000201	0.00	98.	100.	30.	0.00	0.00	20.	80.		
154	1550000543600	CONTROL STICK, AI	77.	0.0.	0.0000790	0.00	39.	70.	0.	0.10	0.00	20.	80.		
155	15500008999771	BELL CRANK	98.	0.0.	0.0001366	0.00	98.	70.	0.	0.00	1.00	20.	80.		
156	15500001152643	SUPPORT, POWER CY	410.	0.0.	0.0000666	0.00	98.	110.	40.	0.00	0.00	20.	80.		
157	15500001152659	SUPPORT, POWER CY	465.	0.0.	0.0000230	0.00	98.	100.	30.	0.00	0.00	20.	80.		
158	15500004844280	LEVER ASSY, TORQU	365.	0.0.	0.000039	0.00	98.	100.	30.	0.00	0.00	20.	80.		
159	15500006064060	PEDAL ASSEMBLY, R	161.	0.0.	0.000022	0.00	123.	70.	0.	0.00	1.00	20.	80.		
160	1550000617715	PEDAL ASSEMBLY, R	99.	0.0.	0.0000033	0.00	69.	100.	30.	0.00	0.00	20.	80.		
161	1550000711154	RESERVE ASSEMBLY	88.	0.0.	0.000002	0.00	39.	70.	0.	0.40	0.00	20.	80.		
162	1550000908716	BRAKE, MAGNETIC	458.	0.0.	0.000136	0.00	100.	100.	30.	0.00	0.00	20.	80.		
163	15500009109671	BELL CRANK	173.	0.0.	0.000271	0.00	105.	100.	30.	0.00	0.00	20.	80.		
164	15500009146104	LEVER ASSEMBLY, C	73.	0.0.	0.000039	0.00	99.	70.	0.	0.00	1.00	20.	80.		
165	15500009146269	BELL CRANK	112.	0.0.	0.000039	0.00	38.	70.	0.	0.16	0.00	20.	80.		
166	15500009146273	BELL CRANK	99.	0.0.	0.000001	0.00	98.	70.	0.	0.00	1.00	20.	80.		
167	15500009146275	BELL CRANK	117.	0.0.	0.000039	0.00	98.	70.	0.	0.00	1.00	20.	80.		
168	15500009146289	BELL CRANK	147.	0.0.	0.000001	0.00	98.	70.	0.	0.00	1.00	20.	80.		
169	15500009146323	BELL CRANK	47.	0.0.	0.000020	0.00	15.	70.	0.	0.00	1.00	20.	80.		
170	15500009146326	BELL CRANK ASSEM	68.	0.0.	0.000001	0.00	98.	70.	0.	0.00	1.00	20.	80.		
171	15500009148697	IDLER ASSEMBLY, C	134.	0.0.	0.000038	0.00	98.	70.	0.	0.00	1.00	20.	80.		
172	15500009148697	BELL CRANK ASSY,	113.	0.0.	0.000038	0.00	98.	70.	0.	0.00	1.00	20.	80.		
173	15500009165442	LINK, CYCLIC CONT	143.	0.0.	0.000038	0.00	98.	70.	0.	0.00	1.00	20.	80.		
174	15500009186194	BELL CRANK ASSEM	154.	0.0.	0.000136	0.00	100.	70.	0.	0.00	1.00	20.	80.		
175	15500009186384	BELL CRANK ASSEM	62.	0.0.	0.000005	0.00	98.	70.	0.	0.00	1.00	20.	80.		
176	15500009186387	BELL CRANK ASSEM	88.	0.0.	0.000039	0.00	98.	70.	0.	0.00	1.00	20.	80.		
177	15500009186412	SUPPORT, CYCLIC C	87.	0.0.	0.000038	0.00	98.	70.	0.	0.00	1.00	20.	80.		
178	15500009186417	BELL CRANK ASSEM	41.	0.0.	0.000045	0.00	98.	70.	0.	0.00	1.00	20.	80.		
179	15500009188132	BELL CRANK	70.	0.	0.000045	0.00	98.	70.	0.	0.00	1.00	20.	80.		
180	15500009188412	LEVER ASSEMBLY, C	126.	0.0.	0.000136	0.00	222.	100.	30.	0.00	0.00	20.	80.		
181	15500009192369	GRADIENT ASSEMBLY	8.	0.0.	0.000047	0.00	219.	70.	0.	0.00	1.00	20.	80.		
182	15500009192925	BOOT ASSEMBLY, SE	35.	0.0.	0.000058	0.00	99.	70.	0.	0.00	1.00	20.	80.		
183	15500009112295	BOOT ASSEMBLY, SU	24.	0.0.	0.000039	0.00	100.	70.	0.	0.00	1.00	20.	80.		
184	15500009112298	COVER ASSEMBLY, R	3.	0.0.	0.000045	0.00	126.	70.	0.	0.00	1.00	20.	80.		
185	15500009171821	STRAP, WEBBING, TA	1849.	0.0.	0.000022	0.00	63.	110.	40.	0.00	0.00	20.	80.		
186	15500009750520	SICK ASSEMBLY, GUN	126.	0.0.	0.000045	0.00	222.	100.	30.	0.00	0.00	20.	80.		
187	15500009104944	PILOT COIL STICK	8.	0.0.	0.000022	0.00	39.	70.	0.	0.00	0.00	20.	80.		
188	155000091049434	COVER PILOT COIL	35.	0.0.	0.000066	0.00	99.	70.	0.	0.00	0.00	20.	80.		
189	155000091049456	PILOTS SEAT	24.	0.0.	0.000039	0.00	99.	70.	0.	0.00	0.00	20.	80.		
190	155000091049456	GUNNER SEAT, BOTT	9584.	0.0.	0.000001	0.00	0.	70.	0.	0.00	0.00	20.	80.		
191	155000091049456	PANEL INDICATING	2652.	0.0.	0.000098	0.00	36.	70.	0.	0.00	0.00	20.	80.		
192	155000091049456	PANEL INDICATING	903.	0.0.	0.000021	0.00	36.	70.	0.	0.00	0.00	20.	80.		
193	155000091049456	PILOT ACCURIS PAN	36.	0.0.	0.000039	0.00	0.	70.	0.	0.00	0.00	20.	80.		
194	1550000910715417	ANGLE CAUTION	2339.	0.0.	0.000042	0.00	36.	70.	0.	0.10	0.00	20.	80.		
195	155000091147672	SEAL, PING, METAL	59.	0.0.	0.000029	0.00	126.	70.	0.	0.00	0.00	20.	80.		
196	1550000911763758	FADE SET COMP	41.	0.0.	0.000027	0.00	0.	70.	0.	0.00	0.00	20.	80.		
197	1550000911763758	FADE SET COMP	58.	0.0.	0.000027	0.00	0.	70.	0.	0.00	0.00	20.	80.		
198	1550000911763758	BLADE SET COMP	100.	0.0.	0.000027	0.00	0.	70.	0.	0.00	0.00	20.	80.		
199	1550000911763781	BLADE COMPRESSOR	51.	0.0.	0.000001	0.00	153.	70.	0.	0.00	1.00	20.	80.		
200	1550000911763789	BLADE SF COMP	49.	0.0.	0.000027	0.00	0.	70.	0.	0.00	0.00	20.	80.		

## ITEMS RANK ORDERED IN NORMAL INPUT ORDER

PART	MSN	DESCRIPTION	COST	OST	FAIL RT	NRTS	BCY	DCY	DRY ECON	DCUN	OPA	ESS	INVEN
191	18400005709811	SEAL, TUBING, ENG ENGINE, AIRCRAFT,	2.	2.0	0.000090	0.00							
192	18400005110866	HOUSING, SEAL	2.	0.0	0.0000116	0.15	180.	116.	46.	2.0	0.00	0.00	100
203	18400006568523	ACC DRIVE GEARBO	25.	0.0	0.000022	0.06							20
204	18400007274663	LOCK RINGS	6486.	0.0	0.000022	1.00	100.	100.	38.	0.00	0.02		20
205	18400007668645	TUBE, LINEAR	8.	0.0	0.000022	0.06	9.	70.	39.	0.00	0.00		20
206	18400007821771	VANE ASY, COMPRES	118.	0.0	0.000044	0.25	10.	100.	39.	0.00	0.05		20
207	18400009252973	TUBE ASY, INLET & VANE ASY, COMPRES	10.	0.0	0.000045	0.06	9.	70.	39.	0.00	0.00		20
208	18400009259621	VANE ASSY	228.	0.0	0.000030	0.06	9.	70.	39.	0.00	0.00		20
209	18430009259644	CUP, LOCK PHR TUR	228.	0.0	0.000030	0.06	9.	70.	39.	0.00	0.00		20
210	18400009259747	NOZZLE TURBINE PLATE, LOCKING	12.	0.0	0.000045	0.06	9.	70.	39.	0.00	0.00		20
211	18400009432381	VANE ASSEMBLY	2138.	0.0	0.000039	1.00	0.	104.	34.	0.00	0.00		20
212	18400009455619	WAVE ASSEMBLY	9.	0.0	0.000022	0.06	9.	70.	39.	0.00	0.00		20
213	18400009462416	HOUSING, ASY F CN	216.	0.0	0.000036	0.06	9.	70.	39.	0.00	0.00		20
214	18400009443012	CASE	2889.	0.0	0.000030	0.06	9.	100.	39.	0.00	0.02		20
215	1840010085730	FILTER ELEMENT, F	3.	0.0	0.000084	0.06	9.	96.	96.	0.00	1.00		89
216	9100000039525	VALVE, FUEL, MANIF	161.	0.0	0.000116	0.06	9.	100.	114.	0.00	0.00		20
217	9150000035903	FILTER, FUEL	311.	0.0	0.000097	0.06	9.	100.	159.	0.00	0.00		20
218	9150000035904	FILTER, FLUID	271.	0.0	0.000093	0.06	9.	96.	96.	0.00	0.00		20
219	9150000180012	FUEL PUMP	93.	0.0	0.000039	0.06	9.	70.	39.	0.00	0.00		20
220	9150007823819	NOZZLE, FUEL	55.	0.0	0.000045	0.06	9.	70.	39.	0.00	0.00		20
221	9150009243560	VALVE, FUEL DRAIN	55.	0.0	0.000045	0.06	9.	70.	39.	0.00	0.00		20
222	915010059196	GOVERNOR	6323.	0.0	0.000226	1.00	0.	100.	39.	0.00	0.02		20
223	2915010059197	FUEL CNTL	32421.	0.0	0.000316	1.00	0.	100.	39.	0.00	0.02		20
224	9150008681795	WIRING HARNESS	267.	0.0	0.000045	0.06	9.	70.	39.	0.00	0.00		20
225	9150009579947	IGNITER PLUG	1319.	0.0	0.000226	0.06	9.	70.	39.	0.00	0.00		20
226	915000951778331	COOLER, LUBRICATI	1319.	0.0	0.000271	0.44	162.	100.	49.	0.00	0.50		100
227	91500095437296	TURBINE, FAN ENGI	1986.	0.0	0.000116	0.00	120.	100.	39.	0.00	0.00		20
228	9150008086742	DUCT, OIL COOLER	374.	0.0	0.000116	0.00	120.	100.	39.	0.00	0.00		20
229	9150008218752	VALVE, THERMOSTAT	100.	0.0	0.000090	0.00	96.	90.	39.	0.00	0.00		69
230	9150008771113	Cooler, Fluid TRA	271.	0.0	0.000136	0.50	75.	94.	24.	0.00	0.50		20
231	9450000190190	FUEL AND OIL KIT	5.	0.0	0.000542	0.00	198.	70.	39.	0.00	0.00		20
232	9450004422539	AIR FILTER ASSY	3206.	0.0	0.000099	0.00	189.	100.	39.	0.00	0.10		89
233	9450004422544	AIR FILTER ASSYM	2292.	0.0	0.000099	0.00	192.	94.	24.	0.00	0.25		20
234	9450004422555	CLEANER, AIR SAND	438.	0.0	0.000188	0.00	279.	100.	39.	0.00	0.00		89
235	993000104361	SCREEN, PARTICLE S	283.	0.0	0.000045	0.00	132.	100.	39.	0.00	0.00		20
236	9935001104364	SCREEN, PARTICLE	199.	0.0	0.000045	0.00	141.	70.	39.	0.00	0.00		20
237	9950006177907	LEVER AND BEARING	196.	0.0	0.000090	0.00	90.	70.	39.	0.00	0.00		20
238	9950006793108	SHIELD ASSEMBLY	151.	0.0	0.000045	0.00	213.	70.	39.	0.00	0.00		56
239	995000727549	CAMBOX ASSY, DRIV	135.	0.0	0.000090	0.00	237.	100.	39.	0.00	0.00		20
240	9950007302510	IGNITION UNIT	473.	0.0	0.000039	0.00	6.	70.	39.	0.00	0.00		20
241	9950007305607	COUPLING, SHAFT, R	44.	0.0	0.000015	0.00	129.	70.	39.	0.00	0.00		69
242	1010000575866	FLAME COUPLING	30.	0.0	0.000042	0.00	165.	100.	39.	0.00	0.00		10.
243	10400001034619	CONNECTING LINK	108.	0.0	0.000022	0.00	100.	70.	39.	0.00	0.00		20
244	10400001039495	CONNECTING LINK	413.	0.0	0.000029	0.00	99.	70.	39.	0.00	0.00		20
245	10400001030500	CONNECTING LINK	4.	0.0	0.000090	0.00	70.	70.	39.	0.00	0.00		20
246	1040000106334	CONNECTING LINK	125.	0.0	0.000022	0.00	114.	70.	39.	0.00	0.00		69
247	10420004464434	CONNECTING LINK	251.	0.0	0.000044	0.00	162.	70.	39.	0.00	0.00		20
248	10420008770104	CONNECTING LINK	195.	0.0	0.000044	0.00	90.	70.	39.	0.00	0.00		1.
249	10420008776573	CONNECTING LINK	178.	0.0	0.000045	0.00	285.	70.	39.	0.00	0.00		49
250	104700008794915	CONNECTING LINK	189.	0.0	0.000008	0.00	90.	70.	39.	0.00	0.00		20



ITEMS NUMBER	PART NUMBER	DESCRIPTION	INPUT CRITERIA											
			COST	OST	FAIL	RT	NRTS	BCY	DCY	DRT	BCON	DPA	ESS	INVEN
301	47-0001815773	HOSE ASSEMBLY, NO HOSE ASSEMBLY, NO	2.2. 0000045 0.00	168.	70.	1.	1.	1.	1.	1.	1.	1.	1.	100
302	47-0001815780	HOSE ASSEMBLY, NO	2.2. 0.000003 0.00	135.	70.	1.	1.	1.	1.	1.	1.	1.	1.	100
303	47-0001815786	HOSE ASSEMBLY, NO	2.2. 0.0000022 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	100
304	47-0001815793	HOSE ASSEMBLY, NO	2.2. 0.000004 0.00	111.	70.	1.	1.	1.	1.	1.	1.	1.	1.	100
305	47-0001819318	HOSE ASSEMBLY, NO	2.2. 0.000009 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	100
306	47-0001826219	HOSE ASSEMBLY, NO	2.2. 0.0000078 0.00	45.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
307	47-0000851851	HOSE, AIR DUCT	2.2. 0.0000587 0.00	45.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
308	47-0001827351	HOSE ASSEMBLY, NO	2.2. 0.0001118 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
309	47-0001829670	HOSE ASSY	2.2. 0.0000452 0.00	0.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
310	47-00000715744	COUPLING, HALF, JU	2.2. 0.000045 0.00	51.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
311	47-0004523974	COUPLING, MALE SP	2.2. 0.000045 0.00	33.	70.	1.	1.	1.	1.	1.	1.	1.	1.	120
312	17504005884511	FITTING, LUBRICANT	2.2. 0.000009 0.00	84.	100.	1.	1.	1.	1.	1.	1.	1.	1.	60
313	43-0000615070	VALVE, SOLENOID	2.2. 0.000045 0.00	0.	77.	1.	1.	1.	1.	1.	1.	1.	1.	20
314	43-0000617697	VALVE, SOLENOID	2.2. 0.000045 0.00	0.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
315	43-000061769845	VALVE, CUT OFF	2.2. 0.000045 0.05	147.	100.	1.	1.	1.	1.	1.	1.	1.	1.	20
316	43-00009305102	VALVE, SOLENOID	2.2. 0.000078 0.00	135.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
317	43-00009312299	VALVE, LINEAR, DIR	2.2. 0.000098 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
318	461000102800886	HYD SOL VALVE	2.2. 0.000099 0.00	10.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
319	12-00000514720	VALVE, AIR PRESSURE	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
320	43-0000189239	COCK, POPPET DRAI	2.2. 0.000181 0.00	189.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
321	43-0000189247	COCK, POPPET DRAI	2.2. 0.000136 0.00	66.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
322	48200004949613	VALVE, SOLE CLOSI	2.2. 0.000045 0.00	57.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
323	4820000920025	VALVE, CHECK	2.2. 0.000045 0.00	75.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
324	48200009305273	VALVE, CHECK	2.2. 0.000020 0.00	141.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
325	531000092056790	BOLT, SHEAR	2.2. 0.0000225 0.00	210.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
326	53100006245116	NEUT, PLAIN, SPLINE	2.2. 0.000045 0.00	36.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
327	53100009455750	WASHER, KEY	2.2. 0.0000542 0.00	0.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
328	53100009597503	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
329	53100009703882	GASKET	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
330	5310000985609	RING, WIPER	2.2. 0.0000451 0.00	0.	70.	1.	1.	1.	1.	1.	1.	1.	1.	60
331	531000191024	SEAL, PLAIN ENCAS	2.2. 0.000181 0.00	171.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
332	53100009950892	GASKET	2.2. 0.0000225 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
333	5310001920035	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
334	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
335	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
336	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
337	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
338	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
339	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
340	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
341	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
342	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
343	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
344	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
345	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
346	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
347	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
348	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
349	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
350	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
351	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
352	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
353	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
354	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
355	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
356	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
357	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
358	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
359	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
360	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
361	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
362	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
363	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
364	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
365	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
366	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
367	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
368	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
369	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
370	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
371	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
372	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
373	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
374	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
375	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
376	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
377	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
378	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
379	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
380	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
381	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
382	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
383	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
384	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
385	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
386	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
387	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.	1.	1.	1.	1.	1.	1.	1.	20
388	53100019205724	PACKING, PREFORME	2.2. 0.000045 0.00	90.	70.	1.								



ITEMS RAN - 332 HL IN 10 MTHS. INCORPORATE DATE

**APPENDIX B**

**Baseline Case Scenario Data Base**

**APPENDIX B**  
**BASELINE CASE SCENARIO DATA BASE**

**SCENARIO DATA BASE**

INITIAL DAY OF INTERVAL	NUMBER OF AIRCRAFT	ESSENTIALITY OF DAY	DAY LIMIT	# OF OPERATIONS	FLYING HOURS	SCENARIO LENGTH
1	14	1.0	15000000000.	4	12.0	120
NUMBER OF DAY INTERVALS SPECIFIED-DEPLOYMENT:	15					
INITIAL DAY OF INTERVAL	14	15	33	35	44	48
CUMULATIVE NUMBER OF AIRCRAFT DEPLOYED	266	324	373	382	440	469
NUMBER OF DAY INTERVALS SPECIFIED-FLYING HOURS:	17					
INITIAL DAY OF INTERVAL	1	2	14	32	36	39
DAILY FLYING HOURS	950	950	1050	1250	1290	1330
NUMBER OF DAY INTERVALS SEEN:	17					
INITIAL DAY OF INTERVAL	1	2	14	31	36	39
NUMBER OF OPERATIONS	4.0	4.0	5.0	4.0	4.0	4.0
NUMBER OF DAY INTERVALS REQUIRED-AIRCRAFT AVAILABILITY:	17					
INITIAL DAY OF INTERVAL	1	2	14	31	36	39
DAILY FLYING HOURS	950	950	1050	1250	1290	1330

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SCENARIO LENGTH = 120 DAYS  
 NUMBER OF DAY INTERVALS = 15  
 NUMBER OF OPERATIONS = 4

NUMBER OF DAY INTERVALS REQUIRED-AIRCRAFT AVAILABILITY = 17  
 NUMBER OF DAY INTERVALS = 17

NUMBER OF DAY INTERVALS = 17

NUMBER OF DAY INTERVALS = 17

NUMBER OF DAY INTERVALS = 17

NUMBER OF DAY INTERVALS = 17

NUMBER OF DAY INTERVALS = 17

NUMBER OF DAY INTERVALS = 17

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